

**Remarks**

Claims 1-8, 10-20, 31-32, 39-41, 43, 48, 57-60, and 64-67 are pending in the application. Claims 9, 21-30, 33-38, 42, and 44-47, were previously withdrawn pending allowance of generic claims 1 and 39. Claims 49-54 were previously canceled. Claims 55-56, and 61-63 are canceled by virtue of this amendment. Claims 1, 2, 8, 39, 40, 57-59, and 65-67 have been amended. No new matter has been added by virtue of this amendment. Reconsideration of the application as amended is requested.

**Claim Rejections—35 U.S.C. § 102 and 103**

The Examiner rejects claims 39-41, 55-57, 59, and 60 under 35 U.S.C. § 102(e), as anticipated by or in the alternative, under 35 U.S.C. § 103(a) as obvious over Sato.

Claim 39, as amended provides:

39. An electronic system, comprising a metal base hot carrier transistor and a source of external magnetic field, said metal base hot carrier transistor having a metal base and a collector, an interface there between, wherein an energy barrier between said metal base and said collector to block thermalized carriers in said metal base, said collector having a p region and an n region for facilitating light emission, said metal base hot carrier transistor further comprising a magnetically sensitive portion wherein said source of external magnetic field is positioned to provide a magnetic field parallel to said interface where said external magnetic field intersects said magnetically sensitive portion.

Sato does not teach or suggest a collector having a p region and an n region. In Sato the collector is unipolar. Because Sato does not teach or suggest light emission there would be no motivation to provide a source of complementary carriers and no reason to provide both a p region and an n region in the collector. Therefore, the rejection of claim 39 and claims dependent thereon as anticipated by Sato under 35 U.S.C. § 102(e) or in the alternative, under 35 U.S.C. § 103(a) as obvious over Sato, has been traversed.

The Examiner rejects claims 1-8, 10-20, 31,32, 39-41, 43, 55-57, 59, 60 under 35 U.S.C. § 102(a), or in the alternative, under 35 U.S.C. § 103(a) as obvious over Jiang.

Claim 1, as amended provides:

1. An electronic system, comprising a single device and an external magnetic field, said single device having a light emitting portion, a magnetically sensitive portion, and an energy barrier, wherein an interface is between said magnetically sensitive

portion and said light emitting portion, further wherein said energy barrier is between said magnetically sensitive portion and said light emitting portion, **wherein said external magnetic field is aligned parallel to said interface where said external magnetic field intersects said magnetically sensitive portion**, wherein a change in said external magnetic field is capable of changing magnetization of said magnetically sensitive portion in a direction parallel to said interface, wherein modulation of magnetization of said magnetically sensitive portion is capable of modulating a hot electron current flowing across said energy barrier to said light emitting portion for modulating light emission from said light emitting portion.

Jiang does not teach or suggest an external magnetic field aligned parallel to the interface between the magnetically sensitive portion and the light emitting portion. In Jiang the magnetic field is aligned perpendicular to this interface.

Claim 39, as amended similarly provides a limit "wherein said source of external magnetic field is positioned to provide a magnetic field parallel to said interface where said external magnetic field intersects said magnetically sensitive portion."

Claim 55 and claims dependent on claim 55 have been canceled.

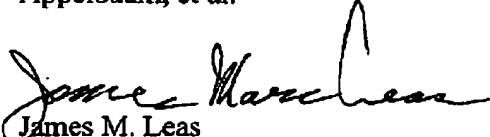
Therefore, the rejection of claims 1 and 39, and claims dependent thereon as anticipated by Jiang under 35 U.S.C. § 102(a), or in the alternative, under 35 U.S.C. § 103(a) as obvious over Jiang has been traversed.

#### Entry of the amendment

Applicant requests entry of the present amendment which places the claims in condition for allowance.

It is believed that the claims are in condition for allowance. Therefore, applicant respectfully requests favorable reconsideration. If there are any questions please call applicant's agent at 802 864-1575.

Respectfully submitted,  
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